Subcommittee on Fisheries Conservation, Wildlife and Oceans
House Committee on Resources

Field Hearing on Natural Disasters in the Gulf of Mexico
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Testimony of
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Chairman Gilchrest and members of the subcommittee, I appreciate this opportunity to present perspectives on recovery from the disasters of Hurricanes Katrina and Rita, which caused much damage on the Gulf Coast during 2005. I realize that a major focus of this field hearing is on fishery resources, habitats, communities and infrastructure. My remarks are directed to the broader issue of the sustainability of coastal Louisiana as a place for humans to live and where these bountiful resources are nourished.

I was born and raised in Louisiana. My family has resided here since the 1830s. There have been enormous changes in this coastal environment since that time, some natural and many caused by human activities. I hold a Ph.D. in oceanography. After completing my graduate studies and developing my early career as a professor in Virginia, I had the exceptional opportunity to return to Louisiana in 1980 as the first Executive Director of the Louisiana Universities Marine Consortium, located in Cocodrie. While building this excellent research and educational facility and the research vessels *Pelican* and *Acadiana*, I was also a professor at LSU and participated in many studies on Louisiana's disappearing wetlands, its productive fisheries, impacts of the oil and gas industry, and the so-called Dead Zone in the Gulf of Mexico.

Since 1990 I have been President of the University of Maryland Center for Environmental Science, headquartered in the heart of Chairman Gilchrest's First Congressional District. However, I have remained engaged in many coastal issues here in Louisiana. Notably, I chaired a panel of experts that in 1994 produced what became a landmark assessment of coastal wetland loss, restoration and management.[1] More recently, I served on the National Technical Review Committee for the Louisiana Coastal Area (LCA) Ecosystem Restoration Plan, under the auspices of the U.S. Army Corps of Engineers.

After Katrina and Rita struck, the members of the National Technical Review Committee volunteered to help rethink the LCA Plan in light of the devastation along the coast and urgent requirements for hurricane protection. We recruited additional scientific and

[1] D.F. Boesch, M.J. Josselyn, A.J. Mehta, J.T. Morris, W.K. Nuttle, C.A. Simenstad, D.J.P. Swift. 1994. Scientific assessment of coastal wetland loss, restoration and management in Louisiana. *Journal of Coastal Research* Special Issue 20:103.1-103.

engineering experts to form the Working Group for Post-Hurricane Planning for the Louisiana Coast. Acting in no official governmental capacity, but with cooperation and assistance of the Corps and the State of Louisiana, the 19-member Working Group produced a report at the end of January entitled *A New Framework for Planning the Future of Coastal Louisiana after the Hurricanes of 2005*.[2] I will briefly highlight some of the findings and recommendations of our report.

The coastal wetlands and barrier islands of Louisiana have greatly deteriorated over the past 60 years—during my life time—largely as a result of human activities that both disrupt the natural processes that build this landscape, including river inputs, sedimentation, and tidal fluctuation, and accelerate disruptive processes, such as altered hydrology and subsidence. In the long term, hurricane protection for larger population centers, including the New Orleans region, can only be secured with a combination of levees and a sustainable coastal landscape, including the extensive marshes and swamps and the bayous, coastal barriers and ridges that characterize this unique coast. Achieving a sustainable coastal landscape will require adapting to changing conditions by re-establishing the constructive processes associated with distributing Mississippi River water and sediments across the coastal landscape, as well as alleviating the other destructive effects of past or future human activities.

This will not be easy, but the Working Group concluded that even with presently observed subsidence rates and anticipated acceleration of sea-level rise, most—although not all—of the coastal landscape could be maintained through the 21st century. However, this can only be achieved with very aggressive, strategic, and well-informed restoration efforts, varying in size and objective but integrated within a comprehensive landscape management plan.

Hurricanes Katrina and Rita provided poignant evidence that no longer can we plan, execute, and maintain coastal ecosystem management and restoration, flood protection, and navigation independently. We must integrate planning, investment and management decisions under a new framework in order to secure these multiple purposes, while recognizing: the forces of nature; the imperative to protect life, property and communities; the value of natural resources and ecosystem services; the environmental and economic sustainability of the solutions; and financial constraints. Such integrated management requires that we ask how might coastal landscape restoration alternatives reduce hurricane damage risks. Conversely, for hurricane storm damage reduction or navigation alternatives we must ask how they might affect the ecosystem services we expect and the sustainability of the coastal landscape.

The State of Louisiana has already taken steps toward the integration and harmonization of these multiple objectives by creation of the Coastal Protection and Restoration Authority during the Special Session of the Legislature convened after the hurricanes.[3] Congress has directed the Corps of Engineers "to conduct a comprehensive hurricane protection analysis and design . . . to develop and present a full range of flood control,

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[2] Accessible online at http://www.umces.edu/la-restore

[3] Senate Bill 71 of First Extraordinary Session, 2005.

coastal restoration, and hurricane protection measures" and is referring to this as the Category 5 Louisiana Coastal Protection and Restoration Project. Still, the large number of separate project authorizations under which the Corps operates hinders its fully integrated planning. For example, planning for so-called Category 5 Project remains separate from LCA Ecosystem Restoration planning. Furthermore, neither the State nor the Corps is yet integrating the navigation system into coastal protection and restoration planning. Yet, navigation channels that cut across the coastal gradient have resulted in substantial degradation of wetland habitats, thus increasing hurricane surge vulnerability. Clearly, future integrated planning and decision making should recognize, account for and mitigate the disruption of coastal landscape dynamics when formulating and evaluating navigation channel expansion, maintenance or abandonment.

A new management framework for simultaneous consideration of flood protection, ecosystem restoration and navigation requires improved organizational arrangements for coordinating and integrating planning, decision making, implementation and evaluation. The Working Group recommends that a joint Federal-State body should be given the responsibility and organizational and fiscal support for guiding these efforts. The Corps, or another appropriate agency, would continue to have the responsibility to design, construct and, if authorized, operate and maintain projects.

In the public discourse concerning Category 5 hurricane protection, particular attention has been given to a continuous peripheral coastal defense (a hurricane barrier) similar to that used in the Netherlands. Although the systematic approach of the Dutch is commendable, substantial differences between the Netherlands and south Louisiana limit the applicability of their model, including contrasts in human settlement patterns, land uses, geology, hydrodynamics and coastal ecology. Maintaining functioning estuarine ecosystems and self-sustaining wetlands inside and adjacent to such peripheral defenses would be extremely difficult, if not impossible, because extended levees and floodgates would obstruct key hydrological processes that maintain the coastal landscape. Rather than simply adopting the Dutch approach, the plan for Louisiana should recognize the different Louisiana setting and take advantage of its characteristic coastal landscape.

Congress has been considering authorization for the Louisiana Coastal Area Restoration in the next Water Resources Development Act (WRDA). The near-term restoration projects included in the Chief of Engineers' Report[4] should be reexamined and prioritized to assure that they provide environmentally and economically sustainable approaches that advance both ecosystem restoration goals and support storm damage reduction. The President's recent supplemental appropriations request included $100 million for coastal restoration to contribute to the protection of the New Orleans area, thus offering an opportunity to better address these multiple objectives. The Working Group urges Congress to authorize a bolder and more expeditious LCA Restoration Plan than that included in the Chief's Report submitted seven months prior to Katrina.

[4] Chief of Engineers Report, Louisiana Coastal Area, Louisiana, Ecosystem Restoration. January 31, 2005. http://www.lca.gov/chief_report.aspx

Because of the unpredictability of and competing demands on the Water Resources Development Act, we suggest that Congress consider separate authorization and financing. The integrated planning process, an engineering and science program and smaller projects should be supported by a programmatic authorization and a reliable appropriation stream. Funding for larger projects could be provided from a variety of sources through a Congressionally-chartered coastal investment corporation. These funds could include appropriately shared revenues from Outer Continental Shelf oil and gas leasing and production, as proposed by Mr. Jindal and co-sponsors in the House and Senators Lott and Landrieu and co-sponsors in the Senate.

I would like to conclude with some personal perspectives on this last point, OCS revenue sharing. From my boyhood experiences fishing with my father in the marshes of St. Bernard and Plaquemines parishes through my later scientific pursuits, I have a first-hand understanding of the major impact that energy production has had on the Louisiana coast over the past half-century. This is due, in particular, to the myriad canals, many of which contain pipelines that carry oil or gas from offshore, that lacerate the coastal wetlands. I am not blaming anyone, because we did not have a good idea of the even more consequential, indirect effects of these canals on wetlands when they were put in place. But, we now have a necrotic legacy that continues to contribute to the demise of the coastal landscape and thereby increase the vulnerability of Louisianans. I chaired the Department of the Interior's OCS Scientific Advisory Committee in the 1980s, during the height of the national controversy over expanded OCS oil and gas development and before President George H. W. Bush imposed a moratorium on leasing off shore of most of the rest of the country. The northwestern Gulf Coast, and Louisiana in particular, has borne a disproportionate burden in meeting the nation's energy needs. As Newt Gingrich and John Barry argued in a recent Time Magazine commentary,[5] it seems not only equitable but also entirely germane to apply some of the OCS revenue stream to heal the wounds and sustain the coastal Louisiana landscape.

[5] Newt Gingrich and John M. Barry. Why New Orleans needs saving. *Time*, March 2, 2006.